

What is claimed is:

1. A high-refractive-index optical silicone oil comprising a pentasiloxane having the formula:

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wherein Me is methyl, each R is independently a  $\text{C}_{10}$  to  $\text{C}_{12}$  aralkyl, and the silicone oil has a refractive index of from 1.45 to 1.50 at 25 °C.

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2. The optical silicone oil according to claim 1, wherein the refractive index is from 1.46 to 1.49 at 25 °C.

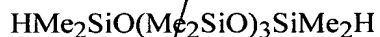
3. The optical silicone oil according to claim 1, wherein the oil has a viscosity of from 3 to 100  $\text{mm}^2/\text{s}$  at 25 °C.

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4. The optical silicone oil according to claim 1, wherein the viscosity is from 5 to 50  $\text{mm}^2/\text{s}$  at 25 °C.

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5. A method of preparing a high-refractive-index optical silicone oil having a refractive index of from 1.45 to 1.50 at 25 °C, comprising reacting a  $\text{C}_8$  to  $\text{C}_{12}$  aryl-containing olefin with a pentasiloxane having the formula:



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in the presence of a supported platinum catalyst.

6. The method according to claim 5, wherein the aryl-containing olefin is styrene or  $\alpha$ -methylstyrene.

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7. The method according to claim 5, wherein the pentasiloxane is prepared by a nonequilibrium reaction between hexamethylcyclotrisiloxane and 1,1,3,3-tetramethyldisiloxane in the presence of an acid catalyst.

5 8. The method according to claim 7, wherein the acid catalyst is hydrochloric acid or trifluoromethanesulfonic acid.

9. The method according to claim 7, wherein the mole ratio of 1,1,3,3-tetramethyldisiloxane to hexamethylcyclotrisiloxane is from 0.7:1 to 10:1.

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10. A method of preparing a high-refractive-index optical silicone oil mixture having a refractive index of from 1.45 to 1.50 at 25°C, comprising reacting a C<sub>8</sub> to C<sub>12</sub> aryl-containing olefin with a mixture comprising a pentasiloxane having the formula:

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a7 and a disiloxane having the formula:



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wherein the pentasiloxane is prepared by a nonequilibrium reaction between hexamethylcyclotrisiloxane and 1,1,3,3-tetramethyldisiloxane in the presence of an acid catalyst.

25 11. The method according to claim 10, wherein the acid catalyst is hydrochloric acid or trifluoromethanesulfonic acid.

12. The method according to claim 10, wherein the mole ratio of 1,1,3,3-tetramethyldisiloxane to hexamethylcyclotrisiloxane is from 0.7:1 to 10:1.

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